CLAIMS

1. A method for detecting PrP^{res} in a biological sample, using a solid support, in particular micro-titration plates or magnetic beads, on which plasminogen is immobilized, which method is characterized in that it comprises:

(a) a step which consists in preparing the biological sample during which step this sample is incubated in a buffer selected from the group consisting of:

(i) buffers for homogenizing the biological sample comprising (1) a buffer selected from the group consisting of buffers comprising at least one surfactant selected from the group consisting of ionic surfactants and nonionic surfactants, a glucose-containing buffer, a sucrose-based buffer and a PBS buffer and (2) optionally, a proteinase K at a final concentration of between 1 and 8 µg/ml, preferably at a final concentration of between 2 and 4 µg/ml, and

(ii) capture buffers comprising at least (1) a surfactant selected from the group consisting of ionic surfactants, and (2) optionally, a proteinase K at a final concentration of between 1 and 8 µg/ml, preferably at a final concentration of between 2 and 4 µg/ml;

(b) a step which consists in capturing PrP^{res} on said solid support, necessarily carried out in the presence of a capture buffer as defined above, without PK, by incubation of the biological sample obtained in step (a) with said support on which plasminogen is covalently immobilized;

(c) a step which consists of controlled denaturation of the PrP^{res} attached to said support by means of the plasminogen, comprising incubation of the PrP^{res} with a denaturing buffer comprising at least one chaotropic agent, at a temperature of between ambient temperature and 100°C, and

(d) a step which consists in detecting the

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denatured PrP^{res} attached to said support, with a PrP protein-specific antibody.

2. The method as claimed in claim 1, characterized in that the ionic surfactant used in step (a) or in step (b) is selected from the group consisting of:

- anionic surfactants, such as SDS (sodium dodecyl sulfate), sarkosyl (Lauroylsarcosine), sodium cholate, sodium deoxycholate (DOC) or sodium taurocholate; and

- zwitterionic surfactants such as SB 3-10 (decylsulfobetaine), SB 3-12 (dodecylsulfobetaine), SB 3-14 (tetradecylsulfobetaine), SB 3-16 (hexadecylsulfobetaine), CHAPS or deoxy-CHAPS.

3. The method as claimed in claim 1 or claim 2, characterized in that the nonionic surfactant used in step (a) of the method according to the invention is selected from the group consisting of C12E8 (dodecyl octaethylene glycol), Triton X100, Triton X114, Tween 20, Tween 80, MEGA 9 (nonanoyl methyl glucamine), octylglucoside, LDAO (dodecyl dimethylamine oxide) or NP40.

4. The method as claimed in any one of claims 1 to 3, characterized in that the incubation time in step (a) is between 5 and 30 minutes at 37°C, preferably for 10 minutes at 37°C.

5. The method as claimed in any one of claims 1 to 4, characterized in that the capture buffer preferably comprises sarkosyl at a final concentration of between 0.5% and 2% (w/v), even more preferably at a final concentration of sarkosyl of 1% (w/v).

6. The method as claimed in any one of claims 1 to 5, characterized in that the capture buffer also comprises a salt preferably selected from alkali metal salts.

7. The method as claimed in claim 6, characterized in that said salt is sodium chloride, at a concentration of between 0.15 M and 0.5 M.

8. The method as claimed in any one of claims 1

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to 7, characterized in that the capture buffer also comprises a protein, and even more preferably bovine serum albumin at a concentration of 0.2 mg/ml.

9. The method as claimed in any one of claims 1 to 8, characterized in that the incubation time in step (b) is between 1 hour and 4 hours at ambient temperature.

10. The method as claimed in any one of claims 1 to 9, characterized in that step (b) also comprises, if necessary, prior to said incubation, a dilution of the biological sample obtained in step (a) in said capture buffer, so as to obtain the adjustment of the protein concentration.

11. The method as claimed in any one of claims 1 to 10, characterized in that the chaotropic agent used in the controlled denaturation step (c) is selected from the group consisting of urea, a guanidine salt, such as guanidine hydrochloride or guanidine thiocyanate, and sodium thiocyanate, or a mixture thereof.

12. The method as claimed in any one of claims 1 to 11, characterized in that the incubation time in step (c) is between 10 and 60 minutes, preferably either for 30 minutes at 37°C with the microtitration plates or for 10 minutes at 100°C with the magnetic beads.

13. The method as claimed in any one of claims 1 to 12, characterized in that the tracer antibody in step (d) is selected from the group consisting of SAF antibodies and anti-recombinant PrP antibodies.

14. A diagnostic kit for carrying out the method as claimed in any one of claims 1 to 13, characterized in that it comprises, in combination:

- at least one homogenizing buffer as defined above,
- at least one capture buffer as defined above,
- at least one denaturing buffer as defined above,

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- a proteinase K at a final concentration of between 1 and 8 µg/ml, preferably at a final concentration of between 2 and 4 µg/ml, and
- a solid support to which plasminogen is covalently attached.

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